REMARKS

Claims 1, 3, 4, 6, 7, and 9 have been amended. Attached hereto is a marked-up version of the changes made to the specification and claims by the current amendment. The attached page is captioned "Version with markings to show changes made." Thus, claims 1, 3-4, 6-7, and 9-12 are pending.

Applicant's representative would like to thank the Examiner for the interview conducted on September 2, 2003. The interview was primarily a discussion regarding the differences between the Kawasaki reference and the invention. It was agreed that the Kawasaki reference disclosed a sized-based method of dividing polygons which was different from color based method of the present invention.

Claims 3, 6, and 9 have been identified as containing allowable subject matter but are objected to as being dependant upon respective rejected base claims. Claims 3, 6, and 9 have been rewritten as independent claims including the limitations of their former base claims. Accordingly, the objection to claims 3, 6, and 9 should be withdrawn.

Claims 1, 4, and 7 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Kawasaki (U.S. Patent No. 6,246,414). Claim 10-11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Kawasaki in view of Gleb (U.S. Patent No. 6,515,674). These rejections are respectfully traversed.

The present invention is directed to a three dimensional graphical system which supports rendering of animation objects. The animation objects are rendered using a technique which retains the visual appearance of animated objects. For example, Figs. 7A and 7B illustrate a robot rendered in accordance to two techniques. More specifically, Fig. 7B illustrates a traditional three dimensional rendering of a robot, while Fig. 7A illustrates the animation rendering technique of the invention. The robot rendered in accordance with the invention has a "flatter" appearance and switches cleanly between a "light" texture and a "shadow" shadow texture. In contrast, the traditionally rendered robot has a more three dimensional look and it utilizes a single texture which is modulated in brightness.

The processing of the present invention is illustrated by the flowchart of Fig. 4, and described in the specification at pages 9-13, and includes establishing a boundary line between light and dark. Each polygon which is wholly within either side of the boundary line are sorted into undivided light and dark polygons. Each polygon which spans the boundary line, is divided a plurality of divided polygons such that each divided polygon is wholly within either side of the boundary line. These divided polygons are also sorted into light and dark polygons. A "light" texture is then applied to each light polygon and a "dark" texture is applied to each "dark polygon."

Accordingly, independent claims 1, 4, and 7 each recite a boundary between two color parts and dividing polygons which interest said boundary.

> sorting the plurality of polygons into polygons of a first color part and polygons of a second color part along a boundary line between said first and second color parts, according to the direction of a light source and normal lines of the plurality of polygons; dividing polygons intersecting the boundary line along the boundary line; sorting the divided polygons into polygons of the first color part and polygons of the second color part along the boundary line according to the direction of a light source and normal lines of the divided polygons;

claim 4 recites:

> sorting the plurality of polygons into polygons of a first color part and polygons of a second color part along a boundary line between said first and second color parts, according to the direction of a light source and normal lines of the divided polygons, dividing polygons intersecting the boundary line along the boundary line, and sorting the divided polygons into polygons of the first color part and polygons of the second color part along the boundary line according to the direction of a light source and normal lines of the divided polygons.

claim 7 recites:

> sorting the plurality of polygons into polygons of a first color part and polygons of a second color part along a boundary line between said first and second color parts, according to the

direction of a light source and normal lines of the plurality of polygons; dividing polygons intersecting the boundary line along the boundary line; sorting the divided polygons into polygons of the first color part and polygons of the second color part along the boundary line

Kawasaki discloses an image processing method and apparatus which also utilizes divided polygons. More specifically, Kawasaki discloses an apparatus and method for implementing a graphical technique known as "bump mapping," which renders minute irregularities in order to render more realistic graphical images. Column 3, lines 22-28. Kawasaki discloses a method wherein each polygon is divided into a two or more smaller polygons until each smaller polygons has sides having a dimension less than a predetermined threshold. Column 3, lines 29-54; column 4, line 62 – column 5, line 25. After the polygon division, Kawasaki discloses calculating the brightness of each apex of each polygon. Column 5, lines 59-63. Kawasaki therefore fails to teach or suggest sorting whole polygons which do not span the boundary line between two color parts, and dividing only those polygons which spawn the boundary line, as required in the above recited portions of claims 1, 4, and 7.

The Office Action additionally cites to Gleb, which discloses the use of a parametric texture map in a graphical system. However, like Kawasaki, Gleb also fails to teach or disclose the above recited limitations of claims 1, 4, and 7.

Independent claims 1, 4, and 7 each recite defining a boundary line between two color parts, sorting polygons which are wholly on a single side of said boundary line into polygons of a first or second color, and subdividing each polygon which spawns said boundary line and sorting sub-polygons which wholly on a single side of said boundary line. As noted above, the prior art of record is devoid of any teachings or suggestion regarding this feature. Accordingly, claims 1, 4, and 7 are believed to be allowable over the prior art of record. The claims 10, 11, and 12 respectively depend from claims 1, 4, and 7 and are also believed to be allowable over the prior art of record for these reasons and because the combinations defined in the claims are not shown or suggested by the

prior art of record.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to withdraw the outstanding rejection of the claims and to pass this application to issue.

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Respectfully submitted,

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